

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently amended) A method for aligning a first signal to
2 optimize correlation with a second signal, the method comprising:
3 receiving a set of signals including the first signal and the second signal,
4 wherein the set of signals is related to computer system performance parameters;
5 determining a correlation between the first signal and the second signal to
6 facilitate reducing downtime of a computer system;
7 performing an alignment adjustment to the second signal to adjust a
8 relative alignment between the first signal and the second signal;
9 determining a correlation between the first signal and the second signal
10 with the alignment adjustment;
11 determining if the correlation is greater with the alignment adjustment; and
12 if the correlation is greater with the alignment adjustment, adjusting the
13 alignment of the second signal.
- 1 2. (Original) The method of claim 1, further comprising combining
2 the first signal and the second signal into a combined signal.
- 1 3. (Original) The method of claim 1, wherein the first signal
2 comprises a combination of signals that have been aligned to optimize correlation.

1 4. (Original) The method of claim 3, further comprising removing a
2 signal from the combination of signals that has the lowest correlation with other
3 signals in the combination of signals.

1 5. (Original) The method of claim 4, further comprising re-optimizing
2 the correlation of each signal in the combination of signals with other signals in
3 the combination of signals.

1 6. (Original) The method of claim 3, further comprising predicting an
2 individual signal in the combination of signals by using a correlation of the
3 individual signal with other signals in the combination of signals to predict the
4 individual signal.

1 7. (Original) The method of claim 6, further comprising:
2 measuring the individual signal;
3 comparing the measured individual signal with the predicted individual
4 signal; and
5 determining that the individual signal is faulty if the measured individual
6 signal does not substantially match the predicted individual signal.

1 8. (Currently amended) The method of claim 7, further comprising
2 | predicting failure of a component within a the computer system when a signal
3 generated by the component is determined to be faulty.

1 9. (Original) The method of claim 3, further comprising discarding a
2 signal that is completely correlated with another signal in the combination of
3 signals.

1 10. (Original) The method of claim 1, wherein prior to determining a
2 correlation between the first and second signals, the method further comprises
3 performing an analytical re-sampling operation, which uses interpolation to add
4 data points to the first and/or second signal to ensure that each signal has the same
5 number of data points.

1 11. (Original) The method of claim 1,
2 wherein determining the correlation between the first signal and the
3 second signal involves correlating a window of data points from the first signal
4 with a window of data points from the second signal; and
5 wherein the process of adjusting the alignment involves sliding the
6 window along the second signal, until correlation is maximized with the window
7 for the first signal.

1 12. (Original) The method of claim 11, further comprising adjusting
2 the size of the fixed window and/or the sliding window.

1 13. (Currently amended) A computer-readable storage medium storing
2 instructions that when executed by a computer cause the computer to perform a
3 method for aligning a first signal to optimize correlation with a second signal, the
4 method comprising:
5 receiving a set of signals including the first signal and the second signal,
6 wherein the set of signals is related to computer system performance parameters;
7 determining a correlation between the first signal and the second signal to
8 facilitate reducing downtime of a computer system;
9 performing an alignment adjustment to the second signal to adjust a
10 relative alignment between the first signal and the second signal;

11 determining a correlation between the first signal and the second signal
12 with the alignment adjustment;
13 determining if the correlation is greater with the alignment adjustment; and
14 if the correlation is greater with the alignment adjustment, adjusting the
15 alignment of the second signal.

1 14. (Original) The computer-readable storage medium of claim 14,
2 wherein the method further comprises combining the first signal and the second
3 signal into a combined signal.

1 15. (Original) The computer-readable storage medium of claim 14,
2 wherein the first signal comprises a combination of signals that have been aligned
3 to optimize correlation.

1 16. (Original) The computer-readable storage medium of claim 15,
2 wherein the method further comprises removing a signal from the combination of
3 signals that has the lowest correlation with other signals in the combination of
4 signals.

1 17. (Original) The computer-readable storage medium of claim 16,
2 wherein the method further comprises re-optimizing the correlation of each signal
3 in the combination of signals with other signals in the combination of signals.

1 18. (Original) The computer-readable storage medium of claim 15,
2 wherein the method further comprises predicting an individual signal in the
3 combination of signals by using a correlation of the individual signal with other
4 signals in the combination of signals to predict the individual signal.

1 19. (Original) The computer-readable storage medium of claim 18,
2 wherein the method further comprises:
3 measuring the individual signal;
4 comparing the measured individual signal with the predicted individual
5 signal; and
6 determining that the individual signal is faulty if the measured individual
7 signal does not substantially match the predicted individual signal.

1 20. (Currently amended) The computer-readable storage medium of
2 claim 19, wherein the method further comprises predicting failure of a component
3 within a ~~the~~ computer system when a signal generated by the component is
4 determined to be faulty.

1 21. (Original) The computer-readable storage medium of claim 15,
2 wherein the method further comprises discarding a signal that is completely
3 correlated with another signal in the combination of signals.

1 22. (Original) The computer-readable storage medium of claim 13,
2 wherein prior to determining a correlation between the first and second signals,
3 the method further comprises performing an analytical re-sampling operation,
4 which uses interpolation to add data points to the first and/or second signal to
5 ensure that each signal has the same number of data points.

1 23. (Original) The computer-readable storage medium of claim 13,
2 wherein determining the correlation between the first signal and the
3 second signal involves correlating a window of data points from the first signal
4 with a window of data points from the second signal; and

5 wherein the process of adjusting the alignment involves sliding the
6 window along the second signal, until correlation is maximized with the window
7 for the first signal.

1 24. (Original) The computer-readable storage medium of claim 23,
2 wherein the method further comprises adjusting the size of the fixed window
3 and/or the sliding window.

1 25. (Currently amended) An apparatus for aligning a first signal to
2 optimize correlation with a second signal, comprising:
3 a receiving mechanism configured to receive a set of signals including the
4 first signal and the second signal, wherein the set of signals is related to computer
5 system performance parameters;
6 a correlation mechanism configured to determine a correlation between the
7 first signal and the second signal to facilitate reducing downtime of a computer
8 system;
9 an adjustment mechanism configured to perform an alignment adjustment
10 to the second signal to adjust a relative alignment between the first signal and the
11 second signal;
12 wherein the correlation mechanism is configured to determine a
13 correlation between the first signal and the second signal with the alignment
14 adjustment; and
15 a comparison mechanism configured to determine if the correlation is
16 greater with the alignment adjustment;
17 wherein the adjustment mechanism is configured to adjust the alignment
18 of the second signal if the correlation is greater with the alignment adjustment.

1 26. (Original) The apparatus of claim 25, further comprising a
2 combination mechanism configured to combine the first signal and the second
3 signal into a combined signal.

1 27. (Original) The apparatus of claim 25, wherein the first signal
2 comprises a combination of signals that have been aligned to optimize correlation.

1 28. (Original) The apparatus of claim 27, further comprising a removal
2 mechanism configured to remove a signal from the combination of signals that
3 has the lowest correlation with other signals in the combination of signals.

1 29. (Original) The apparatus of claim 28, further comprising a re-
2 optimization mechanism configured to re-optimizing the correlation of each signal
3 in the combination of signals with other signals in the combination of signals.

1 30. (Original) The apparatus of claim 27, further comprising a
2 prediction mechanism configured to predict an individual signal in the
3 combination of signals by using a correlation of the individual signal with other
4 signals in the combination of signals to predict the individual signal.

1 31. (Original) The apparatus of claim 30, further comprising:
2 a measuring mechanism configured to measure the individual signal;
3 a performance mechanism configured to compare the measured individual
4 signal with the predicted individual signal; and
5 a fault-determination mechanism configured to determine that the
6 individual signal is faulty if the measured individual signal does not substantially
7 match the predicted individual signal.

1 32. (Currently amended) The apparatus of claim 31, further comprising
2 a component-failure mechanism configured to predict failure of a component
3 within a the computer system when a signal generated by the component is
4 determined to be faulty.

1 33. (Original) The apparatus of claim 27, further comprising a
2 discarding mechanism configured to discard a signal that is completely correlated
3 with another signal in the combination of signals.

1 34. (Original) The apparatus of claim 25, further comprising a re-
2 sampling mechanism configured to perform an analytical re-sampling operation,
3 which uses interpolation to add data points to the first and/or second signal to
4 ensure that each signal has the same number of data points.

1 35. (Original) The apparatus of claim 25,
2 wherein the correlation mechanism is configured to determine a
3 correlation between a window of data points from the first signal with a window
4 of data points from the second signal; and
5 wherein the adjustment mechanism is configured to slide the window
6 along the second signal, until correlation is maximized with the window for the
7 first signal.

1 36. (Original) The apparatus of claim 35, wherein the first and second
2 adjustment mechanisms are further configured to adjust the size of the fixed
3 window and/or the sliding window.